# Scientific Data Analysis & Management at the APS

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The great richness of data collected at synchrotrons plays critical roles in scientific exploration. Advances in detector technology, measurement automation and acquisition techniques are creating ever increasing amounts of data. However, methods for understanding data have not kept pace; there is no “Moore’s law” scaling that applies to by-hand examination of data. Manual analysis and management of data is too time consuming and cumbersome for large, complex datasets. Computational tools are needed to automate the understanding process.

This talk will describe some of the efforts successfully applied at high-throughput, large data volume producing beamlines at the APS. It will cover recent developments in data analysis and reduction packages, a new data management system, and the APS high-performance computing infrastructure. It will also discuss exciting new collaborative initiatives with computer scientists and with the Argonne Leadership Computing Facility, and will pose some of the needs and challenges unique to large synchrotron facilities.